

REEL #3  
BALIN, P.N.

UNCLASSIFIED  
B  
PROCESSING DATE--17JUL70  
TITLE--PATHOMORPHOLOGICAL CHANGES INDUCED BY CHRONIC EXPOSURE TO THE  
PESTICIDE MANEB -U-  
AUTHOR--BALIN, E.A.  
COUNTRY OF INFO--USSR  
SOURCE--KIEV, VNIIEBNCYE DELC, NR 10, 1965, PP 55-58  
DATE PUBLISHED-----69

29  
5  
34

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PESTICIDE, CARBAMATE, ORGANIC SULFUR COMPOUND, LIVER,  
NECROSIS, THYROID, TOXICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1979/0117

STEP AC--UR/0475/69/000/010/0095/0098

ACCESSION AC--AP0046808

UNCLASSIFIED

Acc. Nr.:

AP0046808

Ref. Code: URO475

USSR

JPRS: 50315

UDC 615.77/.799-099+613.63:632.95

BALIN, P. N., Laboratory of Pathomorphology, All-Union Scientific Research  
Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics

"Pathomorphological Changes Induced by Chronic Exposure to the Pesticide Maneb"

Kiev, Vrachebnoye Delo, No 10, 1969, pp 95-98

Abstract: Daily peroral administration of the dithiocarbamate Maneb to rats (100 and 500 mg/kg, on 1/50 and 1/10 LD<sub>50</sub>) for 2 to 4 months produced some non-specific degenerative and reactive changes in the heart, kidneys, lungs, brain, spleen, and especially to liver and thyroid. Intensity of symptoms varied with the total dose, duration of the experiment, and individual characteristics of the animals. The development of necrobiotic and necrotic processes in the liver was quite pronounced. The dithiocarbamates are known to be thyrotropic. The proliferative changes brought about in the epithelium of the gland by Maneb are regarded as a compensatory reaction of the parenchyma to a deficiency of organic iodine, because the dithiocarbamates prevent the conversion of inorganic into organic iodine.

Recd/Frame  
19790117

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EXPERIMENTAL DATA ON THE BLASTOMOGENIC ACTIVITY OF THE FUNGICIDE  
MANEB -U-  
AUTHOR--BALIN, P.N. **B**  
COUNTRY OF INFO--USSR  
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 21-24  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FUNGICIDE, ORGANIC SULFUR COMPOUND, CARBAMATE, CARCINOGEN,  
TUMOR, LUNG, LIVER FUNCTION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--3001/0422 STEP NO--UR/0475/70/000/004/0021/0024  
CIRC ACCESSION NO--AP0126175  
UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126175

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBLE BLASTOMOGENIC EFFECT OF A FUNGICIDE MANEB (DERIVATIVE OF ETHYLENEBISDITHIOCARBAMINE ACID WAS STUDIED ON RATS (DOSAGE: 500 MG-KG ORALLY FOR SIX MONTHS WEEKLY). RESULTS SUGGEST THAT MANEB EXERTS A WEAK BLASTOMOGENIC ACTIVITY INDUCING PULMONARY ADENOMAS. THE TUMOR IS LOCATED MAINLY SUBPLEURALLY BUT IS ALSO MET IN OTHER REGIONS OF THE LUNG. THE STRUCTURE IS MAINLY PAPILLARY AND THE TUMOUR DEVELOPS FROM THE ALVEOLAR AND BRONCHIAL EPITHELIUM. THE DRUG CAUSES HEMODYNAMIC DISORDERS, DESTRUCTIVE, DYSTROPHIC AND PROLIFERATIVE CHANGES IN THE LIVER. FACILITY: VSESOUZNOGO NAUCHNO-ISSLEDOVATELSKOGO INSTITUT GIGIYENY I TOKSIKOLOGII PESTITSIDOV, POLIMEKNIKH, I PLASTICHESKIKH MASS MZ SSSR.

UNCLASSIFIED

USSR

UDC 616-006.6-092.259:632.252

**B**  
BALIN, P. N., Pathomorphology Laboratory, All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics, Ministry of Health USSR

"Experimental Data on the Blastomogenic Action of the Fungicide Maneb"

Kiev, Vrachebnoye Delo, No 4, 1970, pp 21-24

Abstract: Mice fed massive doses (500 mg/kg) of the fungicide maneb (manganese ethylene-bisdithiocarbamate) over a period of six months developed only solitary pulmonary adenomas, within 3-6 and 9 months, in the case of tumor-prone and tumor-resistant animals, respectively. The adenomas, mostly papillary in structure, originated from alveolar or bronchial epithelium. Though possessing weak blastomogenic activity, maneb produced hemorrhages, edema, and moderate hyperplasia of lung tissue and hemodynamic disturbances and various degenerative changes in the liver.

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USSR

UDC 551.508.8

ZUYEV, V. YE., SANOKHVALOV, I. V., and BALIN, YU. S., Institute of Atmospheric Optics, Siberian Department of the Academy of Sciences USSR

"Study of Atmospheric Ground Layer and Clouds by 'Lidar' Method"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 5, 1972, pp 125-128

Abstract: The article describes equipment for studying the atmospheric ground layer and clouds by the laser radar method. Radiation emitted by the laser is collimated by an optical system and is sent to the atmosphere by means of two flat mirrors. Part of the radiation strikes a photocell, by means of which oscillograph scanning is begun, and is sent through a 120-nsec delay line to the input of a vertical-deflection amplifier (the reference signal is measured). The radiation reflected by the atmosphere is detected by a receiving system and is recorded (photographed) on the oscillograph through a 480-nsec delay line, which provides time division of the reference and reflected signals. A giant-pulse laser with a wavelength of  $6943 \text{ \AA}$  and a radiation pulse duration of 60 nsec is used. An FEU-83 photomultiplier with a cathode follower is

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USSR

ZUYEV, V. YE., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 5, 1972, pp 125-128

used as the sensitive element of the receiving system. An SI-11 pulse rapid-record oscillograph is used to record the reference and reflected signals. The use of narrow-band filters ( $\Delta\lambda = 20 \text{ \AA}$ ) permits a sharp increase in the signal-noise ratio and enables atmospheric studies to be carried on in the daytime (in cloudy weather). Results are given for measurements of the radiation attenuation coefficient in the atmospheric ground layer, in clouds and in fog, at the proving ground of the Siberian Physicotechnical Institute during April-July 1970.

The authors thank V. S. SHAMANAYEV for his active part in the measurements.

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USSR

UDC 539.374

BALINA, V. S., Leningrad

"Determination of Stresses in Body Parts of Turbines Considering Creep"

Problemy Prochnosti, No 10, 1971, pp 53-56.

Abstract: The bodies of adjusting and stop valves of powerful steam turbines operating under creep conditions generally have near-spherical shape with cylindrical tubes; therefore, the problem of determination of creep stresses in the zone of intersection of the spherical and cylindrical shells under the influence of internal pressure is quite pressing. In this work, this problem is solved by a variation method using simplified relationships between forces and deformation velocities concluded in an earlier work for the case of an exponential creep rule within the framework of the flow theory of A. M. Kachnov. An experimental check of the solution based on the elastic-plastic analogy is performed.

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1/2 009 UNCLASSIFIED  
TITLE--ALL PURPOSE SYNTHETIC BINDER USK1 -U-

PROCESSING DATE--23OCT70

AUTHOR-(02)-TANANIN, A.N., BALINSKIY, V.R.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, 2, 13-14

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PETROLEUM RESIDUE, FOUNDRY MOLD, FOUNDRY CORE, ADHESIVE  
BINDER/(U)USK1 BINDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1734

STEP NO--UR/0128/70/002/000/0013/0014

CIRC ACCESSION NO--AP0118712

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118712

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISTN. RESIDUES FROM BASHKIR PETROLEUM WERE USED FOR PREPN. OF A NEW FOUNDRY BINDER USK-1. THE BINDING ABILITY AND STABILITY ARE POOR IF THE ACID NO. OF THE RESIDUES IS HIGH. IN ORDER TO DET. THE OPTIMUM ACID NO., EXPTS. WERE CARRIED OUT WITH RESIDUES HAVING VARIOUS D.P.S. THE SOLIDIFICATION POINT INCREASES AS THE ACID NO. RISES, E.G. AT 51,7 MG KOH-G, THE SOLIDIFICATION POINT IS PLUS 23DEGREES, WHILE AT 16,2 MG KOH-G, IT IS ONLY PLUS 6DEGREES. WHITE SPIRIT AND A BLEND OF PARAFFIN HYDROCARBONS ARE RECOMMENDED AS SOLVENTS FOR THE BINDER. ADDNS. OF ASPHALT (SOLIDIFICATION POINT 48DEGREES), AND TAR INCREASE THE BINDING ABILITY AND LOWER THE SOLIDIFICATION POINT OF THE BINDER. THE ADHESIVE STRENGTH IS LOWERED WHEN THE VISCOSITY OF BINDER IS DECREASED. USK-1 IS BROWN BLACK LIQ., SP. GR. 0.80-0.90, VISCOSITY 2,6-3,1DEGREESE AT 50DEGREES; ACID NO. MAX. 40 MG KOH-G.; SAPON. NO. MIN. 55 MG KOH-G; SOLIDIFICATION POINT MAX. MINUS 10DEGREES; ADHESIVE STRENGTH MIN. 8.0 KG-CM PRIME2. OPTIMUM TIMES AND TEMPS FOR DRYING SAMPLES CONTG. USK-1 BINDER ARE 45-90 MIN. AT 220-40DEGREES. FIVE RECIPES FOR FOUNDRY COMPNS. CONTG. USK-1 BINDER ARE GIVEN.

UNCLASSIFIED

MATHEMATICS

Differential & Integral Equations

USSR

UDC 517.917

BALITINOV, M. A.

"Several Theorems Concerning the Behavior of Solutions in the Large to a Nonlinear System"

Kiev, Ukrainskiy Matematicheskii Zhurnal, Vol 23, No 1, 1971, pp 56-63

Abstract: This article studies a system of three differential equations having two nonlinearities. When  $a_{21}, a_{31} \neq 0$ , this system can be reduced by linear transformation and satisfies the generalized Routh-Hurwitz conditions when  $\gamma \neq 0$ .

The author first gives four theorems involving the Routh-Hurwitz conditions, whereupon he offers proof of the first two and then introduces three lemmas with proof in order to prove the third. He then proceeds with proof of the fourth theorem and cites four additional ones.

These latter four theorems are proven in a manner similar to the first four. He then proceeds to show by example that the initial system of three

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USSR

BALITINOV, M. A., Ukrainskiy Matematicheskiy Zhurnal, Vol 23, No 1, 1971,  
pp 56-63

differential equations assumes unbounded solutions when the generalized  
Routh-Hurwitz conditions are satisfied.

The article cites 7 literature references.

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USSR

UDC 534.322.3+534.83

BALITSKIY, P. YA., GENKIN, M. D., IVANOVA, M. A., SOKOLOVA, A. G.

"Problems of Modelling Acoustical Processes in Machines"

V sb. Dinamika i akustika mashin (Machine Dynamics and Acoustics -- Collection of Works), Moscow, "Nauka", 1971, pp 89-97 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh503)

Translation: The problem of the acoustical diagnostics of gear trains.-- in this case, of establishing a one-to-one correspondence between the state parameters (the gap and load) and the parameters of the vibration-acoustical signal -- is considered. The various states of the planetary reducer were modeled by establishing the different degrees of side play in gear in the range 0-0.3 mm. The spectral components of the vibration, the correlation function, and the differential range of the distribution of instantaneous values were studied as a function of the gap and load. A characteristic increase in the dispersion of the distribution function with the increase of these parameters was observed and studied. Authors abstract.

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USSR

UDC 534.322.3+534.83

BALITSKIY, F. YA., GENKIN, M. D., SERGEYEV, V. I.

"Problems in the Acoustical Diagnostics of Machines"

V sb. Dinamika i akustika mashin (Machine Dynamics and Acoustics -- Collection of Works), Moscow, "Nauka", 1971, pp 109-116 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh505)

Translation: Several models of diagnosable systems are discussed: in particular, a model in the form of an  $n$ -pole with one (acoustical) output. It is shown that to solve the diagnostics problem of determining the state of the machine, it is necessary to know (on the basis of preliminary study) the correspondence between the parameters of the technical state and the parameters of the acoustical signal. Problems of technical diagnostics are considered as applied to such kinematic parameters as gear trains, bearings, and a piston-cylinder. Possible ways of developing acoustical diagnostics from the aspect of a directed search for most informative signs, the application of computers, and other means are discussed. 43 ref. Authors abstract.

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1/3 031 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--ELECTROPHYSIOLOGICAL FEATURES OF THE NERVOUS SYSTEM WITH MALIGNANT  
GROWTH AND SOME INFLUENCES ON IT -U-  
AUTHOR--(04)-BALITSKIY, K.P., VEKSLER, I.G., TSAPENKO, V.F., KAPSHUK, A.P.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIOLOGICHNIY ZHURNAL, 1970, VOL 16, NR 3, PP 345-350  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ELECTROPHYSIOLOGY, TISSUE TRANSPLANT, REPRODUCTIVE SYSTEM,  
ELECTROENCEPHALOGRAPHY, ANTIEOPLASTIC DRUG, CARCINOMA  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1994/1358 STEP NO--UR/0238/70/016/003/0345/0350  
CIRC ACCESSION NO--AP0115330  
UNCLASSIFIED



2/3 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATIONS SHOWED THAT DURING PROGRESSIVE GROWTH OF THE BROWN PEARCE CARCINOMA INOCULATED INTRATESTICULARLY AND, AS A RULE, RESULTING IN IRREVERSIBLE CANCINATION, THE ELECTROENCEPHALOGRAMS OF RABBITS DISPLAY TWO PHASES OF MAIN CHANGES PHASE OF RAISED ACTIVITY AND THAT OF DEPRESSION. WHILE IN RABBITS WITH CARCINOMA, INOCULATED HYPODERMICALLY AND INTRAMUSCULARLY, ONLY THE PASE OF RAISED ACTIVITY OF INDICES APPEARS. THEN THE ELECTROENCEPHALOGRAM NORMALIZES. THE INVESTIGATION SHOWED, THAT THE RABBITS WITH THE BROWN PEARCE CARCINOMA, TRANSPLANTATED INTRAMUSCULARLY AND GREATED WITH ZYMOSAN AND ANTITUMOUR DRUG CYCLOPHOSPHAN HAVE THE BASE INDICES OF ELECTROENCEPHALOGRAM MORE LOWER AND THE DIFFERENCE FROM THE INITIAL BIOELECTRIC ACTIVITY IS SMALLER, THEN THE ANIMALS, TREATED ONLY WITH CYCLOPHOSPHAN IN THE SAME DOSAGE. THE RESEARCHES PRESENTED SHOW THAT THE DEVELOPMENT OF A TUMOUR PROCESS IS ACCOMPANIED BY A FREQUENCY DECREASE OF THE AFFERENT IMPULSATION WHICH IS RECEIVED IN THE CENTRAL NERVOUS SYSTEM FROM THE REGION OF THE TUMOUR DEVELOPMENT. AT THE TUMOUR RESOLUTION THE FREQUENCY OF THE AFFERENT IMPULSATION IS RESTORED TO THE INITIAL VALUE; AT THE IRREVERSIBLE DEVELOPMENT OF THE TUMOUR THE DROP OF FREQUENCY CONTIJES UP TO ANIMAL DEATH. THE INVESTIGATION INDICATES THAT THE NATURE AND STAGE OF THE TUMOUROUS PROCESS HAVE A SUBSTANTIAL EFFECT ON THE FUNCTIONAL STATE OF VARIOUS DIVISIONS OF THE NERVOUS SYSTEM. THE DYNAMICS OF THE CHANGES IN THE ELECTROENCEPHALOGRAM IS, TO A CERTAIN EXTENT, AN EVIDENCE OF THE NATURE OF THE COURSE OF THE MALIGNANT PROCESS.

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3/3 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115330

ABSTRACT/EXTRACT--THE DEVELOPMENT OF THE TUMOUR AFFECTS THE CHARACTER OF  
THE AFFERENT IMPULSATION. FACILITY: LABORATORY OF PATHOGENESIS  
OF TUMOURS, RESEARCH INSTITUTE OF EXPERIMENTAL AND CLINICAL ONCOLOGY,  
KIEV.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--STUDY OF THE COMPOSITION OF HYDROCARBONS OF TECHNICAL GRADE  
PARAFFIN FROM WESTERN UKRAINIAN PETROLEUM -U-  
AUTHOR--BALITSKIY, N.F.  
COUNTRY OF INFO--USSR  
SOURCE--NEFT. I GAZ. PROM STI. NAUCHNO-PROIZY. SB. (PETROLEUM AND GAS  
REFERENCE--RZH-KHIMIYA NO 1 II 10 JAN 70, ABSTRACT NO I.P 197 NO 1(43), PP  
DATE PUBLISHED-----69  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS  
TOPIC TAGS--CHEMICAL COMPOSITION, PETROLEUM DEPOSIT, PARAFFIN BASE  
PETROLEUM, MOLECULAR SIEVE, CHROMATOGRAPHIC ANALYSIS, GEOGRAPHIC  
LOCATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/0883 STEP NO--UR/0000/69/000/001/0044/0047  
CIRC ACCESSION NO--AR0128382  
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AR0128382  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENT METHODS (NITRATION,  
MOLECULAR SIEVES, AND ACTIVATED CHARCOAL CHROMATOGRAPHY) WERE USED TO  
DETERMINE THE ISOPARAFFIN CONTENT IN PARAFFIN ISOLATED BY COMPLEXATION  
FROM DEGREASED TECHNICAL GRADE PARAFFIN (MELTING POINT 56DEGREES),  
PREPARED FROM A MIXTURE OF DOLINSKOYE AND BORISLAVSKOYE FIELD PETROLEUM  
STOCKS. THE CHROMATOGRAPHIC METHOD ISOLATING NITRATION PRODUCTS WAS  
USED. THE INDEXES OF THE CONTENT OF BRANCHED HYDROCARBONS FOUND BY THE  
VARIOUS METHODS WERE RELATIVELY CLOSE TOGETHER.

UNCLASSIFIED

USSR

UDC 615.332 (Cycloserinum). 014.453

SAZYKIN, Yu. O., CHAYKOVSKAYA, S. M., KORCHAGIN, V. B., PANINA, M. A.,  
IVANOVA, V. N., BALITSKIY, V. A., and VAYNER, Ye. A., All-Union Scientific  
Research Institute of Antibiotics and Institute of Biophysics, Ministry of  
Health USSR

"Sterilization of Oxacillin Preparations With Fast Electrons"

Moscow, Antibiotiki, No 10, 1971, pp 933-936

Abstract: Exposure of preparations of the sodium salt of oxacillin in 0.5 g vials to fast electrons (10 Mev) in a linear accelerator at a dose of 2.5 Mrad resulted in complete sterility of the antibiotic, whereas, tests of control (nonirradiated) vials revealed contamination in every second or third vial. The induced radioactivity of the samples did not exceed  $3.7 \cdot 10^{-10}$  curie even with minimum length of exposure. The procedure had no effect on the antibiotic activity, pharmacological activity (no evidence of toxicity or pyrogenicity) or physicochemical properties of the preparations.

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USSR

UDC: 621.791.7:621.387.143

BASANSKIY, V. V., BALITSKIY, V. M., SAMILOV, V. N., and SUKHENKO, I. V.,  
Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences  
Ukrainian SSR

"Some Characteristics of Microplasma-Arc Welding of Sheet Materials"

Kiev, Avtomaticheskaya svarka, Sept 71, no 9, pp 40-42

Abstract: A paper on the possibility of controlling the volume of the weldpool using highly concentrated plasma heat sources is presented and the technology of microplasma pulsed-arc welding is detailed. The pulsed arc makes it possible to proportion the heat energy supply to the part being welded. The protective gas is selected so as to afford optimum ionization and maximum plasma jet reduction at the exit from the plasma forming duct and at the anode. Experiments conducted with a specially designed MPU-M microplasma unit on metal with  $\delta > 0.3$  mm indicates the possibility of maintaining the welding current component constant. The use of modulated current in the arc enhances the latter's stability with

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USSR

RASANSKIY, V. V., et al, Avtomaticheskaya svarka, Sept 71, no 9, pp 40-42

each repeated pulse. The crystallization conditions of the weldpool are practically unaffected. Modulated current specifications are cited in a table. Tests conducted on both the welds and the parent metal of VT1-OM alloy show the same mechanical properties in both.

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1/2 030 UNCLASSIFIED PROCESSING DATE--2300170  
TITLE--TUNGSTEN AND GALLIUM STRUCTURAL IMPURITIES IN SYNTHETIC QUARTZ  
CRYSTALS -U-  
AUTHOR-(03)-BALITSKIY, V.S., SAMOYLOVICH, M.I., TSINOBER, L.I.  
COUNTRY OF INFO--USSR **B**  
SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, MAR. 21, 1970, P. 580-583  
DATE PUBLISHED--21MAR70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--TUNGSTEN, GALLIUM, QUARTZ CRYSTAL, AUTOCLAVE, METAL OXIDE,  
ABSORPTION BAND SPECTRUM, CRYSTAL GROWING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1084 STEP NO--UR/0020/70/191/003/0580/0583  
CIRC ACCESSION NO--AT0119943  
UNCLASSIFIED



2/2 030  
CIRC ACCESSION NO--AT0119943

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF AUTOCLAVE  
EXPERIMENTS IN THE GROWING OF QUARTZ CRYSTALS CONTAMINATED WITH W AND GA  
FROM AQUEOUS WEAKLY ACIDIC FLUOR CONTAINING SOLUTIONS OF TUNGSTEN AND  
GALLIUM OXIDES. THE SPECTRAL PROPERTIES OF THESE CRYSTALS ARE  
DISCUSSED. THE PRESENCE OF WEAK ABSORPTION BANDS AT 2800, 3500, 4500,  
5200 AND 6300 A IN IRRADIATED CRYSTALS IS NOTED. FACILITY:  
VSESOIUZNYI NAUCHNO ISSLEDOVATEL'SKII INSTITUT SINTEZA MINERAL'NOGO  
SYR'IA, ALEKSANDROV, USSR.

UNCLASSIFIED

USSR

UDC 621.315.592

BALKAREY, YU.I., EPSHTEYN, E.M. [Institute Of Radio Engineering And Electronics,  
Academy Of Sciences, USSR, Moscow]

"Effect Of A High-Frequency Electrical Field On Diffusion Of Carriers In Semi-  
conductors"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 762-763

Abstract: It is shown that in the presence of a strong high-frequency electrical  
field, diffusion of carriers in a semiconductor is significantly changed.  
Specifically, this fact can be used for measurement of the diffusion length of  
carriers. Received by editors, 13 Oct 1971.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--MECHANICALLY DRIVEN MOESSBAUER SPECTROMETER -U-  
AUTHOR-(04)-CHEKIN, V.V., BALKASHIN, O.P., NAUMOV, V.G., SEMIKIN, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(1), 103-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--SPECTROMETER, PHYSICS LABORATORY INSTRUMENT/(U)MOESSBAUER  
SPECTROMETER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0917 STEP NO--UR/0032/70/036/001/0103/0106  
CIRC ACCESSION NO--AP0107446

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECH. DRIVE SPECTROMETER WAS CAREFULLY DESIGNED WITH A CONST. SPEED SYNCHRONOUS MOTOR WITH A WORM GEAR EXHIBITING A GEAR RATIO OF 1:80, A SINGLE CHANNEL GAMMA SPECTROMETER, AN ELECTRONIC NETWORK REGULATOR, AND SPECIAL REINFORCING TO IMPROVE THE DRIVE RIGIDITY. WHILE COSTING ONLY A FRACTION OF THAT FOR THE BASIC ELECTRODYNAMIC VIBRATOR SET UP, THE RESULTS WITH THE PRIME57 FE NUCLEUS WHEN BOTH SET UPS WERE COMPARED WERE EQUIV. WITHIN THE LIMITS OF EXPTL. ERROR. FACILITY: FIZ.-TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

UNCLASSIFIED *B* PROCESSING DATE--17JUL70  
TITLE--TECHNICAL PRODUCTION AND PROPERTIES OF GRANULAR OXIDE REFRACTORIES  
-U-  
AUTHOR--POLUBCYARINOV, G.N., BALKEVICH, V.L., VINOGRADOVA, L.V., LEMESHEV,  
V.G., MINKOV, G.B.  
COUNTRY OF INFO--USSR  
SOURCE--CGNEUPCRY 1970, 35(1), 11-14  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--REFRACTORY PRODUCT, REFRACTORY MATERIAL, OXIDE, ALUMINA,  
ZIRCONIUM COMPOUND, MAGNESIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1978/1939 STEP NO--UR/C131/70/035/001/0011/0014  
CIRC ACCESSION NO--AP0046628  
UNCLASSIFIED

Acc. Nr:

AP0046628

Abstracting Service:

CHEMICAL ABST. 4/70

Ref. Code:

UR 0131

82448a Technological production and properties of granular oxide refractories. Poluboyarinov, D. N.; Balkevich, V. L.; Lemeshev, V. G.; Min'kov, D. B.; Makarova, T. S.; Vino-

gradova, L. V. (Mosk. Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Ogneupory* 1970, 35(1), 11-14 (Russ). The technol. of granular oxide refractories is based on the use of coarse-dispersive powders prepd. from presintered or elec. fused oxides. The ruling opinion that coarse-granular powders of pure elec. fused oxides are inert at sintering and that they do not form sufficiently dense and solid ceramics is faulty. If high pressures (1000-2000 kg/cm<sup>2</sup>) are used, and if the min. amt. of fine-dispersive powders of an oxide is added to the ceramic mass or even no binder is used when the porosity proper for refractories (i.e. 15-20%) is reached at the annealing temps. ordinary for a given oxide. The strength and deformation properties of these products are satisfactory. The deformation temp. of porous granular refractories under load prepd. from pure elec. fused oxides is 50-100% lower than that of nonporous materials. Refractories prepd. from elec. fused oxides show a substantially lower strength, however, sufficient for service at high temps. From the powders of elec. fused oxides one can prep. high-class products comparable in properties with products manufd. from powders of sintered oxides. The main technol. parameters of the manuf. of oxide refractories are practically the

REEL/FRAME

19781939

18

AP0046628

same for both initial materials. The technol. by using sintered oxide powders needs: the preliminary thermal treatment of initial components ( $\text{Al}_2\text{O}_3$ ,  $\text{MgO}$ ,  $\text{ZrO}_2$ ), the fine grinding, the briquetting, the annealing of briquets, and their crushing and partial grinding. The elec. fusion permits using raw initial powders; further, it makes possible to realize the stabilization of  $\text{ZrO}_2$  with  $\text{CaO}$  or the synthesis of complicated compds., namely spinels, zirconates, silicates, and other highly fire-resistant substances.

J. Jindra

37

2/2

19781940

1/3 017 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--DIAMOND TOOL BASED ON A CERAMIC BINDER -U-  
AUTHOR (02)-BALKEVICH, V.L., SURKOVA, I.A.  
COUNTRY OF INFO--USSR  
SOURCE--STEKLO KERAM. 1970, 27(2), 22-4  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, EARTH  
SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--DIAMOND TOOL TECHNOLOGY, HARD ALLOY, CERAMIC BINDER, METAL  
MACHINING, CUTTING TOOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1957

STEP NO--UR/0072/70/027/002/0022/0024

CIRC ACCESSION NO--AP0118918

UNCLASSIFIED



2/3 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118918

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF A CERAMIC BINDER MAKES IT POSSIBLE TO USE DIAMOND TOOLS MORE WIDELY AND, IN PARTICULAR, MAKES IT POSSIBLE TO WORK STEEL TOGETHER WITH HARD ALLOYS. CERAMIC BINDERS ARE GENERALLY DIVIDED INTO FRITTED BINDERS AND SINTERING BINDERS. IN THE PRESENT STUDY, CERTAIN TECH. FEATURES OF PREPG. A DIAMOND TOOL ON A SINTERING BINDER AND THE RESULTS OF THE TESTING OF THIS TOOL ARE PRESENTED. THE PROPOSED SINTERING CERAMIC BINDER EMPLOYED CONSISTS OF A MIXT. OF REFRACTORY CLAY AND NATURAL FLUXES (SUCH AS NEPHELINE SYENITE AND SPODUMENE). THE PRESENCE OF SPODUMENE PRODUCES A DECREASE IN THERMAL EXPANSION OF THE BINDER, AND THEREBY CAUSES AN INCREASE IN ITS THERMAL STABILITY. WITH THIS BINDER, DIAMOND CONTG. RINGS WITH AN EXTERNAL DIAM. OF 150 MM AND A HEIGHT OF 3 MM WERE PREPD. POLY(VINYL ALC.) WAS USED FOR THE TEMPORARY BINDER. PRIOR TO THE SHAPING OF THE RINGS, CERTAIN TECH. PARAMETERS WERE DEFINED, SO AS TO SELECT THE OPTIMUM PRESSING CONDITIONS, WHICH WERE DETD. (1000 KG-CM PRIME2, MOISTURE CONTENT EQUALS 8.3PERCENT). THE RINGS PRESSED UNDER THESE CONDITIONS WERE, AFTER SHORT TERM DRYING, FIRED IN A SPECIALLY CONSTRUCTED LAB. FURNACE WITH A PROTECTIVE GAS (N, HF) ATM. THE TECHNIQUE OF FIRING IN C CONTG. CHARGES HAS BEEN KNOWN FOR A LONG TIME; HOWEVER, IT HAS BEEN EMPLOYED FOR THE 1ST TIME IN THE PRESENT WORK TO PROTECT THE DIAMOND GRAINS FROM OXIDN. THE RINGS WERE PLACED IN THE FURNACE IN A HORIZONTAL FASHION IN GROUPS OF 8-10 PIECES. THE CONSTRUCTION OF THE HEATER MAKES POSSIBLE UNIFORM DISTRIBUTION OF THE TEMP. ALONG THE HORIZONTAL SECTION OF THE FURNACE.

UNCLASSIFIED

3/3 017  
CIRC ACCESSION NO---AP0118918  
ABSTRACT/EXTRACT--FACILITY:  
MOSCOW, USSR.

UNCLASSIFIED

PROCESSING DATE--23OCT70

MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA;

UNCLASSIFIED

Petroleum Processing Technology

USSR

UDC 546.562+541.8

BAL'KOV, B. G., and SKIBIDA, I. P.

"Complex Formation of Copper Stearate With Alcohols, Ketones, and Organic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 4, 1972, pp 908-913

Abstract: The equilibrium constant and heat effects were determined for the formation of the 1:1 complexes between copper stearate and secondary decyl alcohol, undecanone-6, and 9-heptadecanoic acid. The equilibrium constants, determined in this article by isomolar and equilibrium perturbation methods, were low by about a factor of 2 relative to reported spectral data. Values for the heat effect (enthalpy) fall within the range of published data.

1/1

USSR

YATSENKO, V. G., and BALKOVA, Ye. N., All-Russian Scientific Research  
Institute of Sugar Beets and Sugar

"Duration of the Toxic Action of Herbicides in Sugar-Beet Fields"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 50-52

Abstract: Herbicides should exert a phytotoxic action on weeds during the vegetation period of the plant that they are supposed to protect and not harm plants grown subsequently in the course of crop rotation - i.e., they should be detoxified in the soil before the next crop can be damaged. The degree of detoxification of eptam (I), tillam (II), and dichloralurea (III) applied before the planting of sugar beet seed plants on chernozem fertilized with  $N_{90}$   $P_{120}K_{90}$  was determined by growing oats as a test plant of samples of soil taken from depths of 0-5, 5-10, and 10-20 cm. in the rosette, budding, and flowering stages of the sugar beet plants and also after harvesting of the sugar beet seedlings. Upon harvesting I, II, and III applied in the amount of 4-6, 6, and 10 kg/ha were completely inactivated for all practical purposes, while I applied in the amount of 8 kg/ha retained a residual toxicity that was presumably preserved in the following year. From the standpoint of effective control of weeds without damage to subsequent crops, I applied in the amount of 1/2

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USSR

YATSENKO, V. G. and BALIOVA, Ye. N., Khimiya v Sel'skom Khozyaystve, Vol 9,  
No 7, 1971, pp 50-52

6 kg/ha was best among the herbicides tested, because it retained a high  
herbicidal activity during the growing season and was inactivated at the time  
of harvesting.

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B  
USSR

7  
UDC 669.18-147:61.1.1.1.1

RUTES, V. S., Doctor of Technical Sciences, CHIGRINOV, M. G., Candidate of Technical Sciences, ASKOL'DOV, V. I., Candidate of Technical Sciences, BALLAD, E. R., Engineer, and TKACHEV, P. N., Engineer, Central Scientific-Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Formation and Migration of Non-Metallic Inclusions During Continuous Steel Pouring"

Moscow, Stal', No 10, Oct 70, pp 895-897

Abstract: A high-melting  $ZrO_2$  tracer is introduced into the inwall to clarify the principal sources of admission of non-metallic inclusions during continuous steel pouring — the inwall of the intermediate ladle, the residue of the furnace slag, and also slag which forms as a result of secondary oxidation of molten metal. An intensive flow of metal into the intermediate ladle, determined by the falling stream, makes flotation of inclusions difficult. These flows can be weakened at a sufficiently high level of metal — on the order of 600-650 mm — in the intermediate ladle.

1/1

USSR

UDC 550.834:553.982

VOROZHTSOV, L. N., BALLAKH, I. Ya., KOZMODEM'YANSKIY, V. V., Institute of Geology and Development of Mineral Fuels, "Mangyshlakneftegeofizika" Trust

"Summation of Vertical Seismic Profiling Recordings on the Basis of Controlled Directional Reception"

Moscow, Neftegazovaya geologiya i geofizika, No. 4, 1972, pp 30-34

Abstract: The application of a basic modification of controlled directional reception for stratigraphic tying in of reflected waves and for determining the level of intensity of multiple waves on the vertical seismic profile is discussed along with a description of the results of applying the first correlation modification of controlled directional reception that has been widely applied in the development of vertical seismic profile recordings. Recordings were obtained in conducting vertical seismic profiling in a bore on the Mangyshlak Peninsula in which the correlation of the waves and their stratigraphic tying in was extremely difficult. The complexity of the wave picture on the vertical seismic profile recording was caused by the upper portion of the geological section and the predominant intensity of the incident wave. The latter were processed on the "FOISK-1-24-RNP-V" adder to improve separation and tracing the waves on the vertical seismic

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USSR

VOROZHTSOV, L. N., et al, Neftegazovaya geologiya i geofizika, No. 4, 1972, pp 30-34

profile recordings. Preliminary amplification and the number of channels added was selected in such a way that the incident waves could be correlated along with the rising waves. The summation bases for the modification of controlled directional reception were selected from previously obtained directional tapes in intervals where sharp reflecting boundaries are absent and the sensitivity of the channels is the same. It is concluded that summation of vertical seismic profile recordings on the basis of controlled directional reception makes it possible to carry out separation of reflected waves and their stratigraphic tying in and to determine the intensity of multiple waves. Summation on the basis of controlled directional reception is recommended for processing of vertical seismic profiling recordings when the analysis does not give positive results under processing by other methods.

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BALLOD, A. A.

life support systems

PRODUCING AND EVALUATING THE EFFECTIVENESS OF SILVERED FILTERS FOR  
DECONTAMINATING AND PRESERVING WATER

UDC 628.16.067

So JPB 54163  
22 Dec 71

Article by V. V. Shvachko, S. V. Gushov, Ya. Ye. Sinyak, A. A. Ballo  
and N. A. Sokolova-Moscow, KONTAKTNOYE BIOLOGIYE I MEDITSINE, Krasnodar,  
Vol 5, No 5, 1971, submitted for publication 21 September 1970, pp 36-40

Abstract: This paper gives the experimental characteristics for the contact method for decontaminating water using silver reduced on the surface of activated charcoal and ion exchange resin using ascorbic acid, hydroquinone and formaldehyde. It was established that the dynamics of dissolving of ionic silver from a silvered surface is dependent on the chemical nature of the sorbent and on the method for reducing the silver. In this method the decisive role is played by impurities present on the sorbent surface. A filter consisting of a silvered KU-2 x 8 cationite, reduced by hydroquinone, and AG-5 activated charcoal exhibited a stable rate of washing of silver from the surface.

The decontamination of water by silver ions can be accomplished by different methods: by adding to the water different preparations containing silver salt, enrichment of the water by electrolytic silver, or by bringing the water into contact with silvered surfaces. Each of these methods has its advantages and disadvantages. The use of preparations in tablet form is difficult due to their chemical instability in the light; the use of electrolytic silver is extremely effective but requires the expenditure of electric energy.

In the contact method water is decontaminated using metallic silver applied to the surface. Krause (1928) in Germany and then the Soviet scientists S. V. Moiseyev (1932), V. A. Ugllov (1934), V. A. Lazarev (1935), and others used silver applied to beads, fabric rings, coal and river sand, wadding, gauze and other inert carriers.

USSR

BALLYUZEK, F., Military Medical Academy imeni S. M. Kirov

"Problem of Heart Substitution"

Riga, Nauka i Tekhnika, No 5, 1971, pp 20-25

Abstract: An account of artificial devices designed to maintain blood circulation of the body is presented. Requirements for such devices include small dimensions and high productivity. It is suggested that when replacing the heart with a pump, it is more accurate to talk about two pumps replacing the left half of the heart and the right half of the heart. Various pumps and schemes of operation and various methods of insertion of a donor's heart are discussed. Of 32 patients who received heart transplants, 22 have been living with a transplanted heart for two or more years, and of those who died, most died of causes which could not be linked to the previous heart operation (such as cancer, brain hemorrhage, and other diseases). Still, many difficulties have to be overcome. However, transplantation of a donor heart will become a fairly widespread procedure. Implantation of an artificial heart is expected to supplement, rather than compete with heart transplants in the battle for a second life for the heart patient.

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USSR

Hematology

UDC 615-391

KOLESNIKOV, I. S., BALLYUZEK, F. V., SHANIN, YU. N., KOSTYUCHENKO, A. L.,  
and MALAKHOV, S. F., Hospital Surgical Clinic, Military Medical Academy  
imeni S. M. Kirov, Leningrad

"Experience in the Use of the Hemoglobin-Containing Preparation Erigem as a  
Blood Substitute"

Leningrad, Bestnik Khirurgii imeni I. I. Grakova, Vol 108, No 5, May 72,  
pp 95-98

Abstract: As distinguished from blood extenders that merely bring the plasma volume to normal, the blood substitute Erigem, which contains hemoglobin that has been freed of stroma, transports  $O_2$  and maintains the respiratory function of the blood. Maintenance of this function until it can be restored by a blood transfusion would be one of the characteristics of an ideal blood substitute. Erigem was developed in 1962-64 at the Scientific Research Institute of Hematology and Blood transfusion in Leningrad. The clinical application of small doses of Erigem had been investigated thoroughly, but data on the effects of large doses were lacking. In the work described in this instance, Erigem was administered in large doses to 18 patients with pulmonary disturbances on the first day after surgery of the lungs. In cases of this type, an insufficient respiratory function of the blood is often

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USSR

KOLESNIKOV, I. S., et al., Vestnik Khirurgii imeni I. I. Grekova, Vol 108, No 5, May 72, pp 95-98

encountered in connection with a large blood loss, insufficient respiratory function of the erythrocytes of transfused blood, and a pronounced oligocythememic hypovolemia. Lyophilized Erigem was diluted with Ringer's solution and infused into the bloodstream in single doses of 14 ml per kg body weight (700-1,100 ml) corresponding to approximately 30 g hemoglobin. The preparation exerted a marked hemodynamic effect, increasing the arterial pressure to normal and reducing the tachycardia. It had an apyrogenic effect and exerted a distinct volemic action that continued for the 6-7 hrs during which the hemoglobin that had been introduced circulated in the body. The oxygen capacity of the blood increased. The arterio-venous difference of the plasma with respect to  $O_2$  was 50% on the average after the administration of Erigem. These and other data indicated that Erigem had a satisfactory effect in transporting  $O_2$  in the organism. No adverse reactions to the injections of Erigem were observed. The kidney function was normal after the injections, but caution is indicated in administering large doses of Erigem to patients with kidney disturbances. Erigem can be kept in storage for approximately 2 yrs.

2/2

USSR

UDC 617-089.843-06:616-021.2

VISHNEVSKIY, A. A., KOLESNIKOV, I. S., BALLYUZEK, F. V.,  
PORTNOY, V. F., KOSTIN, E. D., PECHERSKIY, V. I., KOLOMIYETS,  
S. G., and KHUNDANOV, L. L., Institute of Surgery imeni A. V.  
Vishnevskiy Academy of Medical Sciences USSR, and Hospital  
Surgery Clinic Military Medical Academy imeni S. M. Kirov

"Causes of Early Functional Incompetence of Allotransplants"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, Vol 1,  
Jan/Feb 71, pp 3-8

Abstract: Causes and effects in postoperative developments were analyzed, which enabled us to systematize the factors responsible for early functional incompetence of a transplanted organ. Factors in four etiological categories were considered: 1. Organization and Tactics: each of availability of funds for establishing transplantation centers; lack of the required equipment, instruments, and drugs; absence of a central list of potential recipients; and inadequate cooperation between transplantation surgeons and reanimation specialists.

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USSR

VISHNEVSKIY, A. A., et al., Eksperimental'naya Khirurgiya i Anesteziologiya, Vol 1, Jan/Feb 71, pp 3-8

2. Physiological Anatomy: poor estimation of the anatomical and physiological reserves of the transplant; and shortcomings in surgical techniques. 3. Pathophysiology: deteriorated state of the recipient; poor health of the donor; injury to the transplant; excessive functional load on the transplant; and inadequate prevention of operative and postoperative complications. 4. Immunobiology: poor matching of donor and recipient; high immunological potential in the recipient; inadequate prevention of stimulation of immunological reactions in the recipient; and mistakes committed in immunosuppressive therapy.

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**B** Organ and Tissue Transplantation

USSR

UDC 616.12-089.843-0.6:616.12-008.315-0.8:725.51

~~BALIYUZAK, F. V., SHANIN, Yu. N., KOSTYUCHENKO, A. L., SHCHELKUNOV, V. S.,~~  
~~VOLKOV, Yu. N., FEDOROV, G. Z., and SUPRUNENKO, Yu. F., Clinic of Hospital~~  
Surgery, Military Medical Academy imeni S. M. Kirov, Leningrad

"A Sterile Room for the Reanimation of Patients After Homotransplantation of the Heart"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 2, Mar/Apr 70, pp 84-87

Abstract: After transplantation of the heart, respiratory infections constitute one of the principal dangers to the patients because of their lowered resistance and immunity. J. Phillips and G. Spencer estimated that respiratory infections caused the death of 1/4 of patients dying after surgery involving extracorporeal, blood circulation. A sterile chamber (3.7 X 3 X 2.5 m) has been designed for the reanimation and intensive care of patients after surgery involving extensive trauma and requiring rigorous antibacterial protection. The chamber is constructed of plastic sheets welded together and has an entrance lock consisting of two overlapping, suspended plastic sheets. The chamber has connections for O<sub>2</sub>, N<sub>2</sub>O, and vacuum, a telephone line, and electric connections for a defibrillator and an automatic system which records and transmits outside data on the condition of the patient. Equipment for the intubation of the trachea, healing of the tracheo-

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USSR

BALLYUZEK, F. V., et al, Eksperimental'naya Khirurgiya i Anesteziologiya, No 2, Mar/Apr 70, pp 84-87

bronchial passages, and for producing artificial coughs is located in it. Air that has been sterilized by irradiation is pumped into the chamber, in which the air pressure is higher by 7-10 mm than that outside. After 2-3 hrs. of operation of the chamber, the air in it contains no more than 0-2 possibly pathogenic bacteria per cubic meter and no pathogenic bacteria. The chamber is equipped with windows of transparent plastic, has translucent walls, and is lit from the outside. After adequate sterilization measures, a nurse who takes care of the patient may stay in the chamber and other medical personnel may enter it. The chamber ought to be adequate for the care of patients who have undergone heart transplants.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--A STERILE ROOM FOR REANIMATION OF PATIENTS AFTER  
HOMOTRANSPLANTATION OF THE HEART -U-  
AUTHOR--(05)--BALLYUZEK, E.V., SHANIN, YU.N., KOSTYUCHENKO, A.L.,  
SHCHELKUNOV, V.S., VOLKOV, YU.N.  
COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTESIOLOGIYA, 1970, NR 2, PP  
84-87  
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGAN TRANSPLANT, HEART SURGERY, HOSPITAL EQUIPMENT, ISOLATION  
CHAMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/0622

STEP NO--UR/0481/70/000/002/0084/0087

CIRC ACCESSION NO--AP0108837

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0108837

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMMIT TO PAPER A DESCRIPTION OF THE DESIGN AND RESULTS OF HYGIENIC AND BACTERIOLOGICAL EVALUATION OF A STERILE ISOLATION ROOM FOR PATIENTS AFTER HOMOTRANSPLANTATION OF THE HEART. THE ORGANIZATION OF WORK OF THE PERSONNEL IN THE STERILE ISOLATION ROOM IS DEPICTED. FACILITY: KLINIKA GOSPITAL'NOY KHIRURGII VOYENNO MEDITSINSKOY AKADEMII IM. S. M. KIROVA, LENINGRAD.

UNCLASSIFIED

USSR

UDC 621.382.333.34

BAL'YAKOV, D.D., GOLIKOV, V.YU., NEDOLUZHKO, I.G.

"Methods And Results Of Measurement Of The Thermal Resistances Of Average Power Thyristors"

Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. robot za 1968-1969 gg. Mosk. energ. in-t, 1970 g. Sekts. Elektron. tekhniki. Podsekt. Prom. elektroniki (Report On The Scientific-Technical Conference On The Results Of Scientific-Research Work During 1968-1969. Moscow Power Engineering Institute, 1970. Electronic Technology Section. Industrial Electronics Subsection), Moscow, 1969, pp 114-121 (from RZh--Elektronika i yeye prizeneniye, No 6, June 1970, Abstract No 65228)

Translation: The paper presents a circuit and the results of measurements of the static and intermediate thermal resistances of thyristors of Types 2U201 and 2U202 in which the temperature of the junction which was heated by the current of the anode or by the control current was fixed by the magnitude of the residual voltage at a current of 50 ma which was changed by the compensation method. It results that the static thermal resistance of the 2U202 thyristor with heating by the anode current amounts to  $\sim 3.3^{\circ}\text{C/watt}$ , and by the control current of  $1.2 \pm 3.6^{\circ}\text{C/watt}$ ; the 2U201 thyristor is, respectively,  $\sim 3.9^{\circ}\text{C/watt}$  and  $3.7 \pm 5.7^{\circ}\text{C/watt}$ . 3 ill. 2 tab. 2 ref. S.A.

1/1

Acc. Nr.: AP0031637

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i  
Meditsiny, 1970, Vol 69, Nr 1, pp 23-25

THE EFFECT OF THE CILIARY BODY CRYOTHERMY ON THE PERMEABILITY  
OF THE BLOOD-OPHTHALMIC BARRIER

Balmukhanov, A. Karatayev, K.M.

Alma-Ata Institute of Post-Graduate Medical Training, Ministry of Public Health of  
the USSR and Kazakh Research Institute of Oncology and Radiology

Four hours after cryotherapy of the ciliary body penetration of the radioactive isotope  $P^{32}$  into the aqueous humor increased on the average by as much as 17 times and sorption properties of the cornea and crystalline lens by 2.5 times, in comparison to controls. In 48 hours the activity of the aqueous humor rose 3.5-fold and sorption properties of the cornea and crystalline lens 6-fold. After a lapse of 14 days the permeability of all tissues under examination went down, although in contrast to controls the permeability of the blood-ophthalmic barrier and sorptive properties of the eye coats still continued to be much above the normal.

REEL/FRA

13691764

USSR

UDC: 621.372.061

BALOBANOV, V. G., KHROMOV, B. P., BEZRUKOV, V. N.

"Dependence of Reference Level on Signal/Noise Ratio"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., 108-113 (from RZh-Radio-tehnika, No 11, Nov 70, Abstract No 11A88)

Translation: A procedure is known for determining the resolution of a TV system from the resultant aperture characteristic "from light to light" with the aid of the reference level. It is shown that the reference level for small details depends on the form of the frequency characteristic of the kinescope. Introducing aperture characteristics has no effect on the reference level only when kinescopes are used which introduce insignificant frequency distortions. Curves are given which can be used to calculate the visual resolution. Two illustrations, bibliography of three titles. L. S.

1/1

USSR

Television  
UDC: 621.397.001

BALOBANOV, V. G., KHROMOV, B. P., BEZRUKOV, V. N.

"Determining the Limiting Resolution of a Television System from the resultant Aperture Characteristic 'From Light to Light'"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 118-123 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G81)

Translation: It is shown that the threshold reference level from which resolution is read out is not constant, but rather depends on the angular dimensions of the details under examination and the conditions of observation. Graphs are plotted for the reference level as a function of the angular dimensions and the brightness of the background assuming that the signal-to-noise ratio is equal to infinity, and the relative viewing distance is equal to four screen heights. L. M.

USSR

UDC: 621.397.2

BEZRUKOV, V. N., BALOBANOV, V. G.

"On Time Methods of Transmitting Two Television Programs in a Standard Television Channel"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 115-117 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G125)

Translation: Among known methods of transmitting two TV programs in a standard TV channel, those of greatest interest are time methods which do not affect existing scanning standards, do not require extensive modification of the transmitting equipment, and are designed for use with standard TV receivers. Among the time methods based on alternation of two transmitting signals, those in which the signals of the two TV programs change at the frequency of the fields or frames have advantages. In each of these methods, the effect of flickering can be suppressed by using devices which store the duration of the field or frame. The required delay of video signals can be achieved in devices of this type: by cascading ultrasonic delay lines which delay the video signals by a time equal to the duration of a scanning line; by means of magnetic information media; by

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- 150 -

USSR

BEZRUKOV, V. N., BALOBANOV, V. G., Te. Mosk. elektrotekhn. in-ta svyazi,  
1970, vyp., pp 113-117

recording the video signals on the semiconductor target of a vidicon with subsequent readout of the potential relief. It is noted that the present level of technology in television is sufficient to assure transmission of two TV programs in a single standard TV channel in the near future. M. T.

2/2



1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CALCULATING PHASE AND TIME CHARACTERISTICS OF MINIMAL PHASE LINEAR  
TELEVISION SYSTEMS -U-  
AUTHOR--(03)-KHRUMCY, B.P., BEZUKOV, V.N., BALOBANOV, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, RADIOOTEKHNIKA, NO 2, 1970, PP 11-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--NAVIGATION  
TOPIC TAGS--TV SYSTEM, PHASE MEASUREMENT, LINEAR SYSTEM, FREQUENCY  
CHARACTERISTIC  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1286 STEP NO--UR/0108/70/000/002/0011/0017  
CIRC ACCESSION NO--AP0123245  
UNCLASSIFIED

B

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL APPROACH IS PROPOSED FOR CALCULATING THE PHASE AND TIME CHARACTERISTICS IN MINIMAL PHASE TYPE, LINEAR TELEVISION SYSTEMS ACCORDING TO FREQUENCY CHARACTERISTIC SHAPE. RELATIONSHIPS ARE OBTAINED WHICH MAKE IT POSSIBLE TO CALCULATE THE FREQUENCY CHARACTERISTICS WITH SUFFICIENT ACCURACY FOR PRACTICAL APPLICATION. THEORETICAL AND EXPERIMENTAL DATA ARE COMPARED.

UNCLASSIFIED

USSR

UDC 535.215.1

ALEKSANDROV, S.B., BALODE, D.R., BELKIND, A.I., NEYLAND, O.YA., RAYSKUMA, I.K.,  
SILIN'SH, E.A., TAURE, L.F.

"Photoelectronic Properties And Energy Structure Of Transbisbindonilen"

V sb. Poluprovodniki i ikh primeneniye v elektrotekh. (Semiconductors And Their  
Application To Electrical Engineering--Collection Of Works), No 5, Riga,  
"Zinatne," 1971, pp 221-230 (from RZh:Elektronika i yeye primeneniye, No 2, Feb  
72, Abstract No 2A20)

Translation: The results are discussed of a study by the method of photoconduct-  
ivity and photoelectronic emission of the properties of a thin film system of  
transbisbindonilen. Possible mechanisms are considered of photoproduction of  
charge carriers, and an energy scheme of a molecular crystal of transbisbindonilen  
is proposed. 8 ill. 10 ref.

1/1

FOUR

HELBURGV, V. N., SALOMONOV, V. V., TR. VAGZ. SLOVOPOLSK. 1970, VOL. 1, PP. 13-17

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CALCULATING PHASE AND TIME CHARACTERISTICS OF MINIMAL PHASE LINEAR  
TELEVISION SYSTEMS -U-  
AUTHOR--(03)-KHROMCY, B.P., BEZRUKOV, V.N., BALCBANDY, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, RADIOELEKTRONIKA, NO 2, 1970, PP 11-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--NAVIGATION  
TOPIC TAGS--TV SYSTEM, PHASE MEASUREMENT, LINEAR SYSTEM, FREQUENCY  
CHARACTERISTIC  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PRGX Y REL/FRAME--1999/1286 STEP NO--00513R002200310001-2  
CIRC ACCESSION NO--APR123245  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--0000170

CIRC ACCESSION NO--AP0123245

ABSTRACT/EXTRACT--(U) CP-0- ASSTRACT. A GENERAL APPROACH IS PROPOSED FOR CALCULATING THE PHASE AND TIME CHARACTERISTICS IN MINIMAL PHASE TYPE, LINEAR TELEVISION SYSTEMS ACCORDING TO FREQUENCY CHARACTERISTIC SHAPE. RELATIONSHIPS ARE OBTAINED WHICH MAKE IT POSSIBLE TO CALCULATE THE FREQUENCY CHARACTERISTICS WITH SUFFICIENT ACCURACY FOR PRACTICAL APPLICATION. THEORETICAL AND EXPERIMENTAL DATA ARE COMPARED.

UNCLASSIFIED

USSR

UDC 535.215.1

ALEXANDROV, S.B., ~~BAIKOV, D.R.~~, BELIND, A.I., NEYLAND, O.Ya., RAYSLUNA, I.K.,  
SILIN'SH, E.A., TAURE, L.F.

"Photoelectronic Properties And Energy Structure Of Transbisbindonilen"

V sb. Poluprovodniki i ikh primeneniye v elektrotekhn. (Semiconductors And Their  
Application To Electrical Engineering--Collection Of Works), No 5, Riga,  
"Zinatne," 1971, pp 221-230 (from RZh:Elektronika i yeye primeneniye, No 2, Feb  
72, Abstract No 2A20)

Translation: The results are discussed of a study by the method of photoconduct-  
ivity and photoelectronic emission of the properties of a thin film system of  
transbisbindonilen. Possible mechanisms are considered of photoproduction of  
charge carriers, and an energy scheme of a molecular crystal of transbisbindonilen  
is proposed. 8 ill. 10 ref.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--EFFECT OF AMINADAMANTANE ON THE PENETRATION OF INFLUENZA VIRUS  
INTO A CELL -U-  
AUTHOR--(03)-BALONE, T., SLOVYEV, G.YA., GENDON, YU.Z.  
COUNTRY OF INFO--USSR *B*  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 138-46  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--INFLUENZA VIRUS, ADAMANTANE, TISSUE CULTURE, FOWL PLAGUE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3901/0525 STEP NO--UR/0197/75/000/992/0138/0146  
CIRC ACQUISITION NO--AD0100273



2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMINOADAMANTANE DID NOT AFFECT THE  
AMT. OF FOWL PLAGUE VIRUS THAT PENETRATED CULTURES OF CHICK FIBROBLAST  
CELLS. EVIDENTLY ITS ANTIVIRAL EFFECT DOES NOT INCLUDE PROTECTION OF  
THE CELL AGAINST VIRUS PENETRATION. FACILITY: INST. MIKROBIOLOG.  
IM. KIRHENSTEINA, RIGA, USSR.

UNCLASSIFIED

USSR

UDC 576.858.73.095.18:547.8

BALODE, V. A., and BUBOVICH, V. I., Institute of Microbiology imeni Avgust Kirkhenshteyn, Academy of Sciences, Latvian SSR

"The Effect of Some Aminoadamantane Derivatives on Plaque Formation by Influenza Virus"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 7, 1971, pp 59-61

Abstract: A culture of chick embryo fibroblasts was used to test the antiviral action of 3 aminoadamantane derivatives (JP-6, JP-7, JP-76) and 1 adamantane derivative (JP-20), evaluated by their ability to decrease the infection titer of influenza type A virus (fowl plague virus, Weibridge strain). JP-20 was equal to aminoadamantane in suppressing plaque formation. JP-6, JP-7, and JP-76 were much less effective in this respect. The antiviral activity of all the preparations was most pronounced when the fibroblasts were incubated with the compounds before infection. This means that the compounds influence the early stages of influenza virus replication and are likely, therefore, to have more prophylactic than therapeutic effect.

1/1

- 8 -

Semiconductors and Transistors

USSR

UDC 537.311.35

BALODIS, YA.K., PENTYUSH, E.V., PURITIS, T.YA., FONAV, E.A., EGLITIS, V.YA.

"Light Emitting Phenomena Of Mesoplasma In Silicon P-N Junctions In A Pulse Regime"

V sb. Poluprovodniki i ikh primeneniye v elektrotekhn. (Semiconductors And Their Application To Electrical Engineering--Collection Of Works), No 5, Riga, "Zinatne," 1971, pp 139-152 (from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1B131)

Translation: The time dependence of light emission of mesoplasma in a pulse regime is investigated. The regularities established are evidence that the appearance of light emission preceding an abrupt change of the voltage or current are dependent upon the appearance of mesoplasma. The degree of warming up of the carriers is analyzed as well as the possibility of the appearance of recombination radiation in the "pre-mesoplasma" state and in the time of existence of the mesoplasma. 6 ill. 34 ref. Summary.

1/1

BALOG, I.

SO:IPRS 55015  
25 JAN 78

C. GLENN

INVESTIGATION OF MORBIDITY RATE BY THE PHYSICAL EXAMIN. FOR METHOD IN THE  
CZECHOSLOVAK SOCIALIST REPUBLIC

Article by I. Balog, Institute of Social Medicine and Public Health Organiza-  
tion (Director), Doctor Indrzejak Balog, Candidate of Medical Sciences;  
Moscow, Sovetskoye Zdravostreniye, Moscow, No 12, 1971, submitted 4 May  
1971, pp 9/901

In-depth information about the physical condition of the people as a whole  
and population groups in particular is needed for scientific management and  
planning of public health care. For this reason we are engaged in development  
of a method that would permit obtaining most accurate data about the sick  
rate of the population as one of the most important elements characterizing  
the state of health. Two methods were developed to set models to follow:  
an indirect method consisting of keeping a record of illnesses, to which the  
citizens' health records are in constant contact or hospitalization, and the  
direct method of direct examination of a certain portion of the population.  
Both methods have advantages and disadvantages that should be indicated.

The objective of statistical investigation of morbidity is to determine the  
effect and distribution of all illnesses and of each individual, to determine  
the conditions under which they arise and develop, and to investigate the  
effectiveness of medical care so that the available resources could be used  
with maximum benefit. However, to obtain the physical condition of the  
people, it is not enough to know the state at a given time; it is necessary to  
investigate changes therein and to make forecasts for specific periods of time.  
This is needed to plan the training of medical personnel and methods of medical  
intervention with due consideration of specific morbidity in the population as  
related to its composition according to age, sex, social structure, and other,  
as well as with consideration of current knowledge about the causes of diseases.

Such a study should include investigation of social, hygienic, economic,  
and other factors determining the characteristics of morbidity and affecting the  
incidence of different diseases, their onset, development, and duration, as  
well as severity. In addition, such a study could furnish information about the  
effectiveness of therapeutic methods used and prevention of disability and  
mortality due to such diseases.

USSR

UDC: 681.3.06:51

TITOV, N. I., BALONISHNIKOV, M. S.

"Determining the Distribution Density Function for Errors in Analog Computer Calculations"

V sb. Analogovaya i analogo-tsifr. vychisl. tekhn. (Analog and Analog-Digital Computer Technology--collection of works), vyp. 4, Moscow, "Sov. radio", 1971, pp 114-127 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V583)

Translation: The paper deals with problems in determining the error in analog computer solution of problems as a function of the error in the initial data and in the resolving elements of the computer. In connection with the fact that all these errors are random quantities which may have different distribution density functions, an algorithm is proposed for determining the parameters of the law of distribution of the error in analog computer solution of the problem. Authors' abstract.

1/1

USSR

UDC 612.85

BALONOV, L. Ya. and DEGLIN, V. L., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, USSR Academy of Sciences, Leningrad

"Thresholds of Detection of Tonal Signals of Varying Durations During Transient Depression of One or Both Cerebral Hemispheres in Man"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 5, Sep/Oct 73, pp 1030-1032

Abstract: Auditory thresholds were investigated for patients being treated for spasmodic attacks, after a bilateral or unilateral attack had been precipitated with an electrical current. Within 10 to 30 minutes after a bilateral attack a bilateral increase in absolute auditory threshold was observed for signals of all durations, while after a unilateral attack the threshold was increased only on the contralateral side and only for tones of shorter durations. After 30 to 50 minutes a uniform decrease in threshold was seen for bilateral attacks, while for unilateral attacks the decrease was greater for long tones. The bilateral threshold increase after bilateral attacks is said to be determined by a bilateral functional depression of the subcortical and cortical parts of the auditory system. Unilateral results  
1/2

USSR

BALONOV, I. Ya. and DEGLIN, V. L., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 5, Sep/Oct 73, pp 1080-1082

are considered connected to depression of the projected zone of the contralateral hemisphere. Threshold lowering is suggested to be due to intensification of the activity influence of the nonspecific thalamic nucleus.

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• USSR

BALOSHIN, O. N., BLAGORODOV, A. M., BOLONKIN, B. V., VLADIMIRSKIY, V. V., GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV, I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV, YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO, YU. P., Institute of Theoretical and Experimental Physics GKI AE (State Committee for the Use of Atomic Energy)

"The  $K^-p \rightarrow \bar{K}^0 n$  Charge Exchange Reaction at a Pulse of 39 GeV/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of  $K^-$ -mesons on protons ( $K^-p \rightarrow \bar{K}^0 n$ ) at a pulse of 39 GeV/sec. The study was carried out using the ITEF 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was  $1.0 \times 1.5 \times 6$  m. Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

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USSR

BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The  $K^-$ -mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately  $5 \cdot 10^7 K^-$ -mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of  $7.4 \pm 1.2$  microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to  $-1.58 \pm 0.05$ . The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section on pulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

1/1

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BALOVNEV, I.P.

# MEDICINE

29 Jan 71

32

PRO:80VLT SCIENCE

## V. AWARDS, COMPLETS, APPOINTMENTS, AND PERSONALITIES

19. US337

**Y. M. Minkin**

...V, generally, 28 Oct 70, p 4

The International Academy of Wood Science, based at the Chair of the Chemistry of Wood and Cellulose of the Leningrad Forestry Engineering Academy, has become the first Soviet scientist elected a member of the International Academy of Forestry Sciences (IAF).

The International Academy of Wood was created in 1966, and its main purpose is the coordination and encouragement of scientific research devoted to the problems of forest renewal and the procurement and use of wood. There are 100 representatives of scientists from many countries in IAWA.

1/1

20. USSN

**HONORARY FELLOW**

МОСКОВ. ПРАВИТЕЛЬСКАЯ ГАЗЕТА, 1 SEP 70, P 2

Information by means of the President of the Supreme Soviet KHR, the little known Applicant KHRSM has been assigned to the following medical workers of Smolensk Military and A. V. Krasnaya, and assistant L. P. Vashilina, to J.

**L. P. Yokell Inc.**

By decree of the President of the Supreme Soviet Ulyuk GSK, the title Honored Physician of the USSR has been awarded to N. Yezhov for long and productive service in medical institutions of the USSR Ministry of Internal Affairs.

[illegible]

3/3

USSR

BALOVNEV, V. I., CHIZHIK, Ye. I., DVORKOVOY, V. Ya., RASTEGAYEV, I. K.,  
ZELENIN, A. N.

"Device for Studying the Effect of an Explosion in Excavation of Soils"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972,  
Patent No 355311.

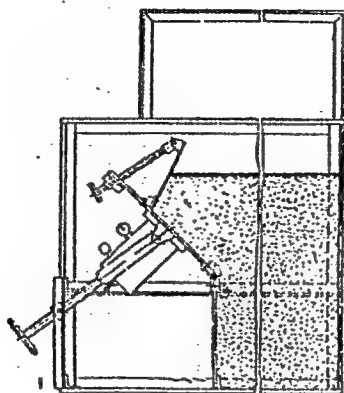
Translation: 1. Device for studying the effect of an explosion in excavation of soils by the working organs of earth moving and transportation machines including a container, an explosive device and measuring instruments, differing in that in order to assure the possibility of regulation of the energy and direction of application of the explosior, a plate is hinged in the container, with the explosive device rigidly connected to the plate, made with a power cylinder with a back valve, with an elastic film mounted on the side toward the soil, interacting with the filament installed in the power cylinder.

2. An installation according to Claim 1, differing in that the plate is connected to the container by a screw mechanism, with a smaller plate articulated to it, connected to the larger plate by an additional screw mechanism.

1/2

USSR

BALOVNEV, V. I., CHIZHIK, Ye. I., ET. AL., Otkrytiya Izobreteniya Promyshlennyye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 355311.



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USSR

UDC 620.193.01:669.29

ROZENFEL'D, I. L., VASHKOV, O. I., BALOVNEVA, R. S., USSR Academy of Sciences,  
Institute of Physical Chemistry

"Some Characteristic Features of the Cathode Behavior of Titanium in Neutral  
Environments"

Moscow, Zashchita Metallov, Vol 8, No 6, 1972, pp 701-703

Abstract: A study was made of the cathode process on a VT-1 titanium electrode in a neutral solution simulating sea water (0.5 normal NaCl). The polarization curves were taken using the P-5827 potentiostat. In the range of potentials more positive than -0.35 volts, a trend is observed toward a noticeable increase in resistance with a decrease in frequency at the same time as the variation in capacitance is insignificant; for potentials more negative than -0.35 volts the resistance exhibits low dependence on the frequency, and the dependence of the capacitance on frequency increases noticeably. In the range of potentials more positive than -0.35 to -0.40 volts, the conductivity of the  $TiO_2$  oxide layer is low and the electrode reveals attributes characteristic of the metal coated with a thin layer of dielectric. For potentials more negative than -0.35 to -0.40 volts titanium behaves as an electrode the electrochemical behavior of which is determined by the potential drop in a double layer (the electrode impedance is close to Faraday). The anomalous behavior of the time dependence of  $1/2$

USSR

ROZENFEL'D, I. L., et al., Zashchita Metallov, Vol 8, No 6, 1972, pp 701-703

the current of the St.3 steel and titanium couple and the couple St.3 and copper couple is compared. The difference in time dependencies of the currents of the couples is explained by the fact that the St.3-copper couple always operates in the diffusion mode while the current of the St.3-titanium couple is determined by the reactivity of the titanium surface which depends on the potential. When the titanium potential in the couple is more positive than -0.35 volts, the cathode process on its surface is inhibited and the couple current is correspondingly low. When the steel potential and, consequently, the titanium potential, is shifted to the negative side (more negative than -0.35 volts) the titanium surface "opens up" to the cathode process, and the couple current increases to a value close to the limiting diffusion current.

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USSR

BAIOSHIN, O. N., VLADIMIRSKIY, V. V., DUKHOVSKOY, I. A., KISHKURNO, V. V.,  
KRUTENKOVA, A. P., KULIKOV, V. V., NIKOLAYEVSKIY, YE. S.,  
PETRUKHIN, V. N., RADKEVICH, I. A., and FEDORETS, V. S., Institute of  
Theoretical and Experimental Physics of the State Committee for the Use of  
Atomic Energy

"Study of the Reaction  $\pi^- p \rightarrow pK^-$  at a Momentum of 3.25 GeV/c With  
a High Momentum Transfer"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 131-133

Abstract: The authors investigate the spectrum of missing masses of a  
proton in the reaction  $\pi^- p \rightarrow pK^-$  for high transfer momentums using  
a track spectrometer with optical spark chambers in a magnetic field. They  
found the momentum of the primary  $\pi^-$  mesons to be 3.25 GeV/c, and they  
measured the differential cross section of the formation of the  $\rho^-$  meson  
in the range of angles  $-1 \leq \cos \theta^* \leq -0.0005$ , which was found to be  
equal to  $28.2 \pm 9.8 \mu\text{barn/sterad}$ . Figure 1 shows the spectrum of the  
missing masses in this reaction for a momentum of the  $\pi^-$  meson of 3.25  
GeV/c. Figure 2 shows the cross section of the creation of the  $\rho^-$  meson  
backwards in the reaction  $\pi^- p \rightarrow p\rho^-$  as a function of the momentum  
of the  $\pi^-$  mesons. The article contains 2 figures and 5 bibliographic  
entries. 1/1

USSR

UDC: 669-138'494(02)

BAL'SHIN, M. Yu.

"Scientific Principles of Powder Metallurgy and Fiber Metallurgy"

Nauchnyye osnovy poroshkovoy metallurgii i metallurgii volokna [English Version Above], Moscow, Metallurgiya Press, 1972, 336 pp.

Translation of Annotation: This book studies the scientific principles of powder metallurgy and fiber metallurgy -- the theory of production (pressing, sintering) and the properties of materials made of metal powders and fibers. This is the first monograph in which these principles are studied as a single and interrelated whole. Results both of the author's own studies and of works published in the domestic and foreign literature are summarized.

The book is designed for a broad range of scientific and engineering workers, involved in the creation of all types of powder and fiber materials (metallic, ceramic, glass fiber, etc.). It will be of interest for specialists in machine building and new technology using these materials, as well as for students in the upper years of metallurgical and machine building schools. Fifty nine figures. Eighty seven tables. Two hundred sixty two biblio. refs.

1/9



USSR

UDC: 669-138'494(02)

Bal'shin, M. Yu., Nauchnyye osnovy poroshkovoy metallurgii i metallurgii volokna, Moscow, Metallurgiya Press, 1972, 336 pp.

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UDC: 669-138'494(02)

Bal'shin, M. Yu., Nauchnyye osnovy poroshkovoy metallurgii i metallurgii volokna, Moscow, Metallurgiya Press, 1972, 336 pp.

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UDC: 669-138'494(02)

Bal'shin, M. Yu., Nauchnyye osnovy poroshkovoy metallurgii i metallurgii volokna, Moscow, Metallurgiya Press, 1972, 336 pp.

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UDC: 669-138'494(02)

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Bal'shin, M. Yu., Nauchnyye osnovy poroshkovoy metallurgii i metallurgii volokna, Moscow, Metallurgiya Press, 1972, 336 pp.

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UDC: 669-138'494(02)

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USSR

UDC: 669-138'494(02)

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1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--THERMODYNAMIC CHARACTERISTICS AND TECHNOLOGICAL PARAMETERS OF  
METALLURGICAL PROCESSES -U-  
AUTHOR--BALSHIN, M.YU.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(5), 1031-3 (TECH PHYS)  
DATE PUBLISHED--70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--METALLURGIC PROCESS, THERMODYNAMICS, METAL CRYSTALLIZATION,  
METAL SHRINKAGE, HEAT CAPACITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/G561 STEP NO--UR/0020/70/191/005/1031/1033  
CIRC ACCESSION NO--AT0126308

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MELTING SOLIDIFICATION TRANSITIONS OCCUR WITHOUT CHANGES IN TEMP. AND THE DISTANCE BETWEEN THE ATMOS OF THE MICROCRYSTAL IN THE SOLID AND THE MOLTEN STATES DOES NOT CHANGE AT THE MELTING TEMP. EXPANSION OF MELTING IS CAUSED BY THE FORMATION OF VOIDS OF THE SAME DIMENSIONS AS THE DISTANCES BETWEEN THE ATMOS. IT BEING IMMATERIAL WHETHER THESE VOIDS ARE OF THE TYPE OF VACANCIES IN SOLIDS OR THEY ARE CAUSED BY WEAKENING OF BONDS BETWEEN ATOMS, IT MAY BE STATED THAT A REDN. IN THE D. UPON MELTING IS EQUIV. TO THE SUBLIMATION OF ATOMS OR MOLS. WHICH OCCUPIED THE VOIDS THUS FORMED. CRYSTN. SHRINKAGE IS NOT ONLY A TECHNOLOGICAL PHENOMENON BUT A PHYS. CONST. OF THE METAL AS WELL.  $Q_{SUBM}$ , HEAT OF MELTING, IS EQUAL TO THE MAX. ENERGY OF THE LOOSENING OF BONDS OBTAINABLE BY MECH. DEFORMATION AT  $Q_{DEGREE}$ SK. WHEN THIS ENERGY IS OBTAINED THE METAL MELTS AT A LOWER TEMP., WHICH DIFFERS FROM THE NORMAL MELTING TEMP. BY  $T_{SUBMAX}$ .  $Q_{SUBM} = Q_{SUBM-C} + C \cdot \Delta T$ , WHERE C SUBP IS THE HEAT CAPACITY OF THE MELT AT THE M.P. FACILITY: INST. MET. IM. BAIKOVA, MOSCOW, USSR.

UNCLASSIFIED

Lasers & Masers

USSR

UDC: 621.378.385

~~BAITAKOV, F. N.~~, BARIKHIN, B. A., KORNILOV, V. G., NIKHROV, S. A.,  
RUBINOV, A. N., and SUKHANOV, L. V.

"Pulse Laser Using 6Zh Rhodamine Solution in Ethyl Alcohol with a  
Radiation Energy of 110 Joules"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, vol 42, No 7, 1972,  
pp 1459-1461

Abstract: The laser described in this paper is pumped by a special lamp and uses a reflector space filled with MgO powder. Length of the ring-shaped discharge space is 45 cm, with a gap of 1 cm, and the space is filled with xenon at a pressure of 10 torr. A cross section of the laser as well as a cross section of the vessel serving as the inner wall of the laser are shown in diagram form. A filter of  $\text{NaCOOCH}_3$  was used to absorb ultraviolet light shorter than 230 nm and thus weaken the tendency to decay of the 6Zh rhodamine solution under light, with resultant increase in radiational energy. Curves are plotted for the current and voltage of the pumping pulse and the oscillation pulse as functions of time. The brightness temperature of the discharge was computed at about 20,000° K. The wavelength of the radiation generated was 590 nm and the width of the oscillation line 20 nm. The authors are associated with the Physics Institute of the Belorussian Academy of Sciences at Minsk.

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USSR

UDC: 539.5


Balter, M. A., Gol'dshteyn, I. Ya., Stennik, V. I., Kislitsyn, V. P., Kharkov

"Brittle Rupture Resistance of High-strength Steels in Various Structural States"

Kiev, Problemy Prochnosti, No 4, Apr 72, pp 76-80.

Abstract: The influence of composition, structure and mechanical properties of structural steels on brittle rupture resistance during testing of notched specimens and specimens with preliminarily applied cracks in static bending is studied. It is shown that the method of testing by static bending of specimens with a crack is quite sensitive for evaluation of the brittle strength of high-strength steels in various structural states.

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TITLE--CLINIKO DOSIMETRIC PREPARATION TO THE RADIATION OF THE PATIENT -U-  
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCREASE OF THE EFFECTIVENESS OF  
RADIUM THERAPY ESSENTIALLY DEPENDS UPON THE METHOD OF CLINICO DOSIMETRIC  
PREPARATION TO THE RADIATION OF THE PATIENT TO IRRADIATION. A NUMBER OF  
TASKS ARE SET FORTH WHICH SHOULD BE SOLVED DURING THE PREPARATORY STAGE  
TO IRRADIATION WITH DUE CONSIDERATION OF INDIVIDUAL PECULIARITIES OF THE  
PATIENT. THE AUTHORS ENUMERATE THE REQUIRED AUXILIARY EQUIPMENT AND  
DESCRIBE THEIR EXPERIENCE ON THE PREPARATION TO THE RADIATION OF THE  
PATIENT BY SPECIALISTS ON RADIUM THERAPY, X RAY DIAGNOSIS AND CLINICAL  
DOSIMETRY. FACILITY: INSTITUT EKSPERIMENTAL'NOY I KLINICHESKOY  
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USSR

UDC 621.315.592

BALTRAKEVYUNAS, R., SAKALAS, A., STORASTA, YU., VAYTKUS, YU. [Vilnius State University imeni V. Kapsukas]

"Special Features Of Conduction In Ge Under Excitation By A Neodymium Laser"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 760-762

Abstract: The effect was investigated of the surface on the photoconductivity of n-Ge ( $\sigma = 40 \text{ ohm}^{-1} \cdot \text{cm}^{-1}$ ) at 300° K. The specimens had unit [blokovyy] contacts. The single crystals were excited by pulses of a neodymium laser ( $h\nu = 1.17 \text{ e.v.}$ ;  $\tau_u = 40 \text{ nanosec}$ ) operating in one transverse mode. Oscillograms of the photoconductivity in nonetched specimens of Ge are shown and a graph is presented of the dependence of photoconductivity on the intensity of the laser light. The results obtained give a basis for the assumption that excitation by short laser pulses can prove to be useful for investigation of surface phenomena. 2 fig. 5 ref. Received by editors, 13 Oct 1971.

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USSR

UDC 576.851.49.097.2

BALTRASHEVICH, A.K. and ROMENENKO, E. Ye., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Antigenic Structure of Escherichia of the O:26:B6, K769:H32 Serotype and Their Dissociative Variants"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 18-22

Abstract: Eight Escherichia cultures of the O26:B6, K769:H32 serotype isolated from children with acute intestinal diseases were classified as two types. One type fermented dulcitate slowly but did not ferment adonit at all, while the other fermented adonit quickly but did not ferment dulcitate. The cultures that did not ferment adonit were agglutinable in homologous O serum and had no additional K769 antigen. The cultures that fermented adonit, on the other hand, were inagglutinable in homologous O serum and had the K769 antigen. These cultures also exhibited a greater tendency to dissociation, which resulted in changes in the receptor composition of the K769 antigen. Culturing the 769 strain on Hottinger's agar produced four different types of colonies with a corresponding K antigen structure.

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USSR

BALTRUNAS, I. I.

"Statistical Properties of Estimates of One Modified Stochastic Algorithm  
(1. Continuous Case)"

Tr. AN LitSSR [Works of Academy of Sciences LitSSR], 1972, B, No 6(73),  
pp 179-188 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973,  
Abstract No 9V257)

Translation: The gradient algorithm

$$\frac{dc(t)}{dt} = \gamma(t) [b(c_0, c(t), t) + \eta(t)]$$

is studied, where  $\gamma, b$  are fixed functions, while  $\eta(t)$  is a certain random process. This algorithm is designed to locate parameter  $c_0$ , and it is indicated that where  $\gamma(t) \equiv \gamma$ , function  $c(t)$ , generally speaking, does not converge with  $c_0$  as  $t \rightarrow \infty$ . In the case when process  $\eta(t)$  is white noise, it is suggested that the function  $c^*(t) = \frac{1}{t} \int_0^t c(s) ds$  be used as an estimate of  $c_0$ . It is shown that  $c^*(t)$  is an asymptotically unbiased and effective estimate of  $c_0$ .

R. Liptser

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- 25 -

BALTRUNAS, I. I.

ESTIMATION OF DOMINANT PARAMETERS OF DYNAMIC SYSTEMS

May 1974

62101

I. I. Baltrunas (Vil'nyus)

Statement of Problem: The term "dominant parameters of a dynamic system" refers to: the transfer coefficient, time constant and pure delay.

The problem consists of constructing a self-tuning model, its investigation and estimation of the dominant parameters of the dynamic system.

Symbols:  $x(t)$  is the input signal (it is assumed that  $x(t)$  is a random process, stable in the broad sense);  $z(t) = y(t) + n(t)$  is the observed signal at the output of the object;  $y(t)$  is noise (assumed to be a stable Gaussian process similar to "white noise").

$y(t) = A(t)x(t) + B(t)$  is the output signal of the model,  $A(t)$  and  $B(t)$  are in the general case the vectors of the tuned parameters of the model at moment in time  $t$ ;  $A(t)$  is related to  $y(t)$  linearly and to  $B(t)$  nonlinearly;  $\delta(x(t), B(t))$  is a known vector function of its argument  $x, B$ .

$\gamma_A(t), \gamma_B(t)$  are defined functions of time (in particular, constants);  $\tau$  is the interval of sliding summation,  $T$  is the length of realizations of processes  $x(t), z(t)$ .

The self-tuning algorithm is achieved using the following equations:

$$\begin{aligned} \frac{d}{dt} A(t) &= -\gamma_A(t) \frac{\partial \delta(x(t), B(t))}{\partial A(t)} \\ \frac{d}{dt} B(t) &= -\gamma_B(t) \frac{\partial \delta(x(t), B(t))}{\partial B(t)} \\ 0 < \tau < T, \quad t \in [T, \infty) \end{aligned}$$

The quality criterion  $Q_2$  of the adaptive process consists of the following functionals:

$$\begin{aligned} Q_1(A_n, B_n, n) &= \frac{1}{n} \int_0^n [z(t) - A(t)x(t) + B(t)]^2 dt \\ Q_2(A_n, B_n, n) &= \frac{1}{n} \int_0^n [z(t) - A(t)x(t) + B(t)]^2 dt, \quad n > 0 \end{aligned}$$